

Application Serial No. 10/537,846
Reply to final office action of January 11, 2010

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Amendments to the Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (currently amended) In a method for searching a wireless LAN AP (access point) in a terminal having a wireless LAN module, a mobile communication module, and a GPS receiving module installed therein, a method for automatically searching a wireless LAN AP comprising:

(a) acquiring location information of the wireless LAN AP provided in a service area of a base station from the base station connected through the mobile communication module;

(b) consecutively tracking a current location of the terminal through the GPS receiving module;

(c) determining a driving start time of the wireless LAN module through the location information of the wireless LAN AP acquired in (a) and the current location information of the terminal tracked in (b),

wherein the driving start time is activated when the current location information of the terminal tracked in (b) is within a predetermined radius of service information of the location information of the wireless LAN AP acquired in (a); **and**

(d) driving the wireless LAN module to detect a beacon signal periodically output by the wireless LAN AP, **and**

wherein the location information of the wireless LAN AP comprises
geographical location information of the wireless LAN AP and the radius of

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service information on the wireless LAN AP.

2. (original) The method of claim 1, wherein (a) comprises: transmitting a location register/update message to the base station through the mobile communication module when the terminal reaches the service area of the base station; receiving a response/success/failure message on the location register/update process from the base station; and acquiring location information of the wireless LAN AP provided in the base station from the response/success/failure message received from the base station.
3. (original) The method of claim 1 or 2, wherein (b) is performed when the location information provided in the base station is acquired in (a).
4. (original) The method of claim 1 or 2, wherein the terminal stores the location information of the wireless LAN AP acquired in (a) in a specific AP location information depository.
5. (cancelled).
6. (currently amended) The method of claim 5 1, wherein the driving start time of the wireless LAN module is determined by comparing the geographical location information of the wireless LAN AP, the radius of service information on the wireless LAN AP, and location information of the terminal tracked through the GPS receiving module.

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7. **(currently amended)** In a terminal for automatically searching a wireless LAN AP (access point), a terminal comprising:

 a mobile communication module for performing wireless communication with a base station, performing a location register/update operation with the base station when the terminal reaches a service area of the base station, and acquiring location information of the wireless LAN AP provided in the service area of the base station;

 an AP location information storage unit for storing location information of the wireless LAN AP acquired by the mobile communication module;

 a GPS receiving module for tracking location information of the terminal through a GPS satellite; **and**

 a wireless LAN module for detecting a beacon signal periodically output from the wireless LAN AP and searching a wireless LAN AP when the drive is started through a comparison of location information of the wireless LAN AP stored in the AP location information storage unit with location information of the terminal tracked by the GPS receiving module when the terminal is within a predetermined radius of service information of the location information of the wireless LAN AP acquired, **and**

wherein the location information of the wireless LAN AP comprises geographical location information of the wireless LAN AP and the radius of service information on the wireless LAN AP.

8. **(original)** The terminal of claim 7, wherein the mobile communication module acquires location information of the wireless LAN AP within a response/success/failure

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message transmitted by the base station with respect to a location register/update message transmitted to the base station for the purpose of a location register/update process of the terminal.

9. (original) The terminal of claim 7, wherein the wireless LAN AP is not automatically searched when the mobile communication module fails to acquire location information of the wireless LAN AP provided in the base station.

10. (currently amended) In a computer readable recording medium for realizing a program including instructions executable by a computer for performing a method for searching a wireless LAN AP (access point) by a terminal having a wireless LAN module, a mobile communication module, and a GPS receiving module installed therein, the method comprising:

(a) acquiring location information of the wireless LAN AP provided in a service area of a base station from the base station connected through the mobile communication module;

(b) consecutively tracking a current location of the terminal through the GPS receiving module;

(c) determining a driving start time of the wireless LAN module through the location information of the wireless LAN AP acquired in (a) and the current location information of the terminal tracked in (b),

wherein the driving start time is activated when the current location information of the terminal tracked in (b) is within a predetermined radius of service information of the

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location information of the wireless LAN AP acquired in (a); and

(d) driving the wireless LAN module to detect a beacon signal periodically output by the wireless LAN AP, and

wherein the location information of the wireless LAN AP comprises
geographical location information of the wireless LAN AP and the radius of
service information on the wireless LAN AP.